REMARKS

Claims 1, 11 and 12 have been amended. Claims 1-12, as amended, remain in the application.

The specification is amended to correct several minor typographical errors and proposed amendments to the drawings are attached. No new matter is added by the amendments to the specification, the drawings and the claims.

Applicants amended the specification on page 1 to explain why the prior art elevator car door suspension system is expensive. Applicants amended the specification on page 5, line 26 to correct a typographical error and clarify that the sensor is a position sensor for achieving the very precise absolute positioning of the door panels.

In the Office Action dated October 8, 2003, Paper No. 10, the Examiner objected to the drawings because reference characters **4** and **5** appear to designate the same structure (see Fig. 1), reference numeral **9** is missing a lead line that connects to the part to which it refers, and they fail to show reference numerals **10** and **10'** as described in the specification on page 5, line 21.

Attached is a proposed amended Fig. 1 adding a lead line to the reference numeral **9** to identify the C-shaped connector described in detail on page 3 of the specification. The arrowhead for the reference numeral **4** is moved adjacent to the exterior surface of the body 5 and the lead lines for the horizontal extensions **7** are extended to those parts and the arrowheads removed. Applicants believe that these proposed drawing amendments clarify that the linear rail **4** includes the body **5**, the vertical web **6** and the horizontal extensions **7** as described in the specification. The arrowhead is removed and the lead line for the recess or opening **11** is extended to the interior wall of the opening for clarification.

Attached is a proposed amended Fig. 3 adding the reference numerals **10** and **10'**. The reference numeral **10** is shown in Fig. 1, as filed, identifying the support block included in the bracket **8**. The bracket **8'** is the same as the bracket **8** as described on page 3 and includes the support block **10'**.

The Examiner also objected to the drawings under 37 CFR 1.83(a) because a linear motor that attaches to both a rail support and a support piece, in claim 1, lines 12-13, and "a plate provided with recesses mounting magnets forming said magnetic way" in claim 9, must be shown or the features canceled from the claims.

With respect to Claim 1, either the magnetic way **16 (23/24)** is attached to the rail support **3** and the linear motor primary **15 (25)** is attached to the support piece **12 (12')**, as shown in Figs. 1, 6 and 7, or the linear motor primary **28** is attached to the rail support **3** and the magnetic way **26/27** is attached to the support piece **12'**, as shown in Figs. 8 and 9. Thus, as stated in Claim 1, the magnetic way **16 (23/24, 26/27)** is attached to one of the rail support **3** and the support piece **12 (12')** and the linear motor primary **15 (25, 28)** is attached to another one of the rail support **3** and the support piece **12 (12')**.

With respect to Claim 9, the magnetic way **16** is shown in Fig. 1 as having a flat plate **3** provided with a recess **17** for receiving the magnet. Applicants amended Fig. 1 to place the arrowhead for the reference numeral **16** lead line at the surface of the magnet to which the reference numeral **16a** has been added. The arrowhead is removed from the reference numeral **17** lead line and the line is extended to a wall of the recess. A second reference numeral **17** is added to the left of the magnet **16a**. Applicants amended the specification on page 3 to add the reference numeral **16a** to the description.

Upon approval by the Examiner, Applicants will file amended formal drawings.

The Examiner objected to the disclosure because of the following informalities:

On page 3, lines 3-4, the statement that connector **9** has a C-profile is incorrect since bracket **8** referenced in Fig. 1 is shown as having a C-profile. Further, on page 3, line 29, it appears that "igus, inc." should be --Igus, Inc.--. Further still, on page 3, lines 14-15, it's unclear as to what constitutes an "elongated primary". In other words, a "primary" what? Finally, on page 5, lines 21 and 22, "Igus" and "IglidurJ" appear to be a typo. Appropriate correction is required.

The statement regarding the shape of the connector **9** is correct since the bracket **8** includes the C-shaped connector **9** and the support block **10** as explained on page 3.

The spelling "igus" is correct on page 3 as shown on the company website at "igus.com" wherein the company uses a stylized form in all lower case. The related typographical errors on page 5 have been corrected.

As explained on page 3, the term "elongated primary" refers to the primary part of a permanent magnet flat linear synchronous motor. Examples of elongated linear motor primaries are shown in Fig. 1 **(15)**, Fig. 7 **(25)** and Fig. 9 **(28)**. The elongated primaries are complementary

to the magnetic ways shown in Fig. 1 (**16**), Figs. 6 and 7 (**23** and **24**) and Figs. 8 and 9 (**26** and **27**).

The Examiner rejected Claims 1-12 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention since, with respect to Claims 1, 11 and 12, it is unclear what constitutes "a primary".

Applicants amended Claims 1, 11 and 12 to recite a "linear motor primary". As described on page 3 of the specification, the "linear motor primary" is of elongated coil construction and is illustrated in Figs. 1, 7 and 9. Such motors are well known in the art as shown in the U.S. Patent No. 5,838,079 and the U.S. Patent No. 5,910,691.

The Examiner rejected Claims 1-12, as best understood, under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,272,923 issued to Anderson in view of U.S. Patent No. 6,289,643 issued to Bonar. The Examiner stated that the Anderson patent discloses a door suspension system comprising: a rail support (32) attached to a door frame (34) and located above a doorway opening; the rail support having a plate attached to an elongated rail that has a substantially cylindrical body (28) and a web (30) attached therewith; the rail support being attached to the elongated rail by connectors (66 and 62) that have a substantially C-profile bushing (62) embracing the rail support; the elongated rail is mounted to a cylindrical shaped bearing (74) that positions in an opening of a support block (76); at least two brackets (38, 44) each having a connector of a support piece extending perpendicular to the bracket and connected to a rigid plate of the mounting block; and the bracket with the support piece is attached to a door (16) by a connector (78). The Examiner further stated that the door system of the Anderson patent is not driven by an electromagnetic, but the Bonar patent teaches a sliding door opened by an electromagnet.

According to the Examiner, the Bonar patent teaches a support piece (31) having a connecting means (33) connecting to a door (32) and a groove on a support piece that supports an elongated magnetic way (69) and a primary (66, 67) of a linear motor thereon (see Figs. 4 and 10). The Examiner stated that the elongated magnetic way of the Bonar door assembly is spaced apart between a support piece and rigid plates (27, 28) of a support block (13) and the rigid plates are attached to the support block by fasteners (19). The Examiner concluded that it would have

been obvious to one of ordinary skill in the art at the time of the invention was made to provide between the support piece and rigid plate of the Anderson vehicle door an electromagnetic way and a primary of a linear motor thereof as taught by Bonar in order to have a sliding door that operates with no moving parts to reduce sound and to transfer a partial weight of the door upper part to a lower part of the door and sub-floor.

With respect to Claims 5 and 6, the Examiner stated that since there is no significant important to the invention of where the magnetic way or the primary is mounted to the rigid plate or the support piece, it would have been an obvious matter of choice of design at the time the invention was made to provide either the support piece or the rigid plate with either the magnetic way or the primary for the operation of the door thus producing no new and unexpected results. With respect to the materials of neodymium and ferrite, they are earth elements that are available and well known in the art of magnet per se. Accordingly, it would have been obvious to one of ordinary skill in the art as a matter of engineering design choice to utilize the available earth elements of neodymium and ferrite elements to manufacturing permanent magnet therefrom because it is well-within the level of skill in the art to utilize the known materials accordingly to the elements properties for its suitability of intended use, i.e., neodymium and ferrite are well known to have high conductive properties and they often use in forming a metal for a desire of conductive purpose.

The Examiner is correct that the Anderson patent does not show an elongated magnetic way and a linear motor primary as defined by Applicants' Claims 1-12. Also, the construction of the supports for the top and bottom of the vehicle sliding door prevents any vertical movement of the door. The Bonar patent shows a residential building sliding door also mounted in such a manner that there is no vertical movement of the door. The Bonar linear motor has a U-shaped magnet (69) that extends vertically on opposite sides of the center members (67) so that the magnetic forces generated by the magnet extend in a horizontal plane. There is no vertical magnetic component generated that could support the weight of the door even if it were free to move vertically. Even if the linear motor used in the Bonar sliding door assembly could be added to the Anderson vehicle door as suggested by the Examiner, such a combination would not function in the manner recited by Applicants' Claims 1-12 whereby an attraction force between the magnetic way and the linear motor primary cancels at least partially a weight of the door.

The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure. According to the Examiner, the following references of record show devices having similar configurations of design: U.S. Patent No. 6,446,389 issued to Heffner et al.; U.S. Patent No. 4,624,617 issued to Belna; U.S. Patent No. 4,544,985 issued to Metz et al.; U.S. Patent No. 5,380,095 issued to Pryor; U.S. Patent No. 6,055,777 issued to Rekioja; U.S. Patent No. 6,032,416 issued to Springer et al.; U.S. Patent No. 6,324,789 issued to Stephen; U.S. Patent No. 5,077,938 issued to Moreuil; U.S. Patent No. 4,091,570 issued to Favrel; U.S. Patent No. 5,594,316 issued to Hayashida; U.S. Patent No. 4,147,073 issued to Mercier; U.S. Patent No. 5,235,226 issued to Olsen et al.; U.S. Patent No. 6,131,140 issued to Clark et al.; U.S. Patent No. 5,085,094 issued to Clawson; U.S. Patent No. 5,712,516 issued to Kabout; U.S. Patent No. 5,175,455 issued to Penicaut; U.S. Patent No. 4,641,065 issued to Shibuki et al.; U.S. Patent No. 5,172,518 issued to Yoshino; U.S. Patent No. 5,736,693 issued to Piech et al.; U.S. Patent No. 3,858,452 issued to Gatland et al., U.S. Patent No. 6,467,584 issued to Yamamoto et al.; and U.S. Patent No. 5,949,036 issued to Kowalczyk et al. Applicants have reviewed these references and found them to be no more pertinent than the prior art relied upon by the Examiner in his rejections.

In view of the amendments to the claims and the above arguments, Applicants believe that the claims of record now define patentable subject matter over the art of record. Accordingly, an early Notice of Allowance is respectfully requested.